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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,778	10/15/2004	Yoshiro Miyazaki	OPS C-658	6602

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FLYNN THIEL BOUTELL & TANIS, P.C.
2026 RAMBLING ROAD
KALAMAZOO, MI 49008-1631

EXAMINER

DATSKOVSKIY, MICHAEL V

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,778

Applicant(s)

MIYAZAKI ET AL.

Examiner

Michael V. Datskovskiy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/06/05; 10/15/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the self-excited oscillation heat pipe with a heat transfer surface formed inside clothing (claim 9) and the self-excited oscillation heat pipe disposed over the main unit of a spacecraft mounting electronic equipment (claim 11) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "an excellent heat transfer state" in claim 19 is a relative term which renders the claim indefinite. The term "an excellent heat transfer state" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 4, 6, 8, 10, 12-13, 15, 17, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (US Patent 6,250,378).

Kobayashi teaches a portable computer, Figs. 42-43, comprising a self-excited oscillation entirely flexible waved bent heat pipe 49 for cooling a CPU 1. (col. 16, lines 41-53), said heat pipe 49 being classified in such a way for the following reasons:

Although Kobayashi consider said heat pipe as a thermo-siphon, in this embodiment he teaches the heat pipe as made without any wick or capillary (col. 17, lines 1-10),

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wherein a condensed coolant is returning back to an evaporator by a gravity force. Such a system satisfies the principle of a self-excited oscillation heat pipe. As an explanation (it is not a combination of references) see also cited below reference by Smyrnov regarding his teaching of the principle of a self-excited oscillation heat pipe working as a thermo-siphon (Smirnov, col. 4, lines 10-17).

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 5, 6, 8, 10, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Smyrnov (US Patent 6,672,373).

Smyrnov teaches a self-excited oscillation heat pipe, Figs. 1-11, charging working fluid in a fluid channel reciprocating multiple times between a heating portion and a cooling portion, wherein at least a part of any portion of a container constituting the fluid channel (heating, transporting or cooling) comprises a part having flexibility (claim 4) and can be disposed at a portion which is deployable, foldable and deformable.

Smyrnov teaches furthermore a self-excited oscillation heat pipe according to Claim 1, wherein at least a part of a conduit constituting the container of the self-excited oscillation heat pipe has a flexible bellow shape (Figs. 3-4, col. 2, lines 57-65. Smyrnov also teaches said self-excited oscillation heat pipe can be used in a spacecraft space application (Fig. 11, col. 8, lines 17-26).

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8. Claims 1, 2, 6, 8, 10, 12-13, 17, 19-20 are also rejected under 35 U.S.C. 102(e) as being anticipated by Saucius et al.

Saucius et al teach a portable computer, Fig. 4, comprising a self-excited oscillation heat pipe 44 (see paragraph [0025], line 2) for cooling a CPU 48, said heat pipe including a flexible connection 44. Saucius et al also teach said portable computer comprising a fan 10 on the radiation surface on the backside of the display 33.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3, 7, 9, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smyrnov or Kobayashi.

Regarding to claims 3, 14 and 16: Smirnov or Kobayashi teach all the limitations of the claims except: at least a part of a conduit constituting the container of the self-excited oscillation heat pipe has a coiled shape (claims 3 and in a computer in 14), or a bellow shape in a computer (claim 18). It would have been obvious to one ordinary skilled in the art at the time invention was made to employ a flexible part of a self-excited oscillation heat pipe conduit container having a shape of a coil or bellow, since applicant has presented no evidence that the particular configuration of the conduit part is significant or is anything more than one of numerous configurations a person of

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ordinary skill in the art would find obvious. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Regarding to claims 7, 18: Smirnov or Kobayashi teach all the limitations of the claims except: at least a part of the container of the self-excited oscillation heat pipe is constituted by super elastic alloys or supper elastic plastic alloys (although Smyrnov in col. 9, lines 1-27, suggests to make a heat pipe from a plastic-Polypropylene or Teflon): It would have been obvious to one having ordinary skill in the art at the time invention was made to employ a heat pipe made of super elastic alloys or supper elastic plastic alloys, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding to claim 9: Smirnov teaches all the limitations of the claims except: A self-excited oscillation heat pipe, wherein the heat transfer surface is formed inside clothing and the conduit is disposed inside the clothing. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Callimore (US Patent 5,117,901); Smyrnov (US Patent Application Publication 2003/0037909 A1) and Drolen et al (US Patent 5,732,765).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Datskovskiy whose telephone number is (571) 272-2040. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael V Datskovskiy
Primary Examiner
Art Unit 2835

02/13/2006